

MANUFACTURE OF MAGNETIC CORE

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Abstract

PURPOSE: To make it possible to control freely the value of a core loss and to make it possible to manufacture a magnetic core, which is high in saturation magnetic flux density and permeability, by a method wherein in the case the magnetic core obtainable by performing a plasma activation sintering on soft magnetic metal particles and a high-resistance soft magnetic material is manufactured, the composition of the material is modified and the core loss is set at a desired value.

CONSTITUTION: In the case a magnetic core made of a composite soft magnetic material obtainable by sintering soft magnetic metal particles and a high-resistance soft magnetic material by plasma activation is manufactured, the composition of the high-resistance soft magnetic material is modified and a core loss is set to a desired value. For example, coated particles 5 made by applying a high-resistance soft magnetic material on soft magnetic metal particles are put in between punches 3 and 3 in a mold frame 4 of a plasma activation sintering device 1. Then, the particles 5 are pressed by the punches 3 and 3 and after a pulse current is made to flow between electrodes 2 and 2 in a vacuum to generate plasma, conducting current is made to flow to sinter the powder. At that time, a core loss is controlled by controlling the covering thickness of a high-resistance soft magnetic material layer covering the surface of the soft magnetic metal particles.

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